

The white of the head—the “blaze” of horses, the facial stripes of the badger—often affects regions not of fat accumulation, but where the skin immediately overlies bone and membrane (frontals and nasals and zygomatic arch), which thus seem to produce an atrophy similar to that caused by underlying fat.

In many animals the hair-atrophy assumes the form not of whitening, but of baldness. Marine mammals are hairless in proportion to the development of their peripheral fat-layer; fattening cattle lose their hair, while the baldness of man corresponds in position to the “blaze” of horses, and the bare buttocks of monkeys to the white rumps of other animals.

Yellow and red frequently follow the same rules of distribution as white. They are well known to be fat pigments.

I must carefully guard myself against the extension of my theory to all cases where white occurs in vertebrates. It is obvious that not all animals are subject to this atrophy, and that there must be other causes for absence of pigment. It seems highly probable from what I have written that the known unevenness of animal coloration is but the external indication of uneven nutrition in different regions of the body.

UNIVERSITY AND EDUCATIONAL INTELLIGENCE.

CAMBRIDGE.—Prof. J. A. Ewing, F.R.S., and Prof. Karl Pearson, F.R.S., have been elected honorary fellows of King's College.

Mr. W. Chawner, Master of Emmanuel, has been appointed an elector to the Sadlerian professorship of mathematics, in succession to the late Dr. N. M. Ferrers.

Mr. C. H. Talbot has presented to the university a number of instruments used for the researches of his father, Mr. H. Fox Talbot, F.R.S.

The Duke of Bedford has presented to the Museum of Zoology a number of valuable specimens of *Cervus davidianus*.

Mr. W. Bateson, F.R.S., and Mr. A. C. Seward, F.R.S., have been appointed members of the botanic garden syndicate; Prof. Marsh a member of the museums syndicate; Mr. W. M. Coates and Mr. E. T. Whittaker members of the observatory syndicate; Dr. D. MacAlister and Prof. Marsh members of the State medicine syndicate; Dr. J. Griffiths a member of the medical board; Mr. F. H. Neville, F.R.S., a member of the board for physics and chemistry; Mr. J. E. Marr, F.R.S., a member of the board for biology and geology; Mr. A. C. Seward, F.R.S., a member of the board for agricultural studies; Mr. F. C. Parsons an examiner in human anatomy.

The grace for the appointment of a syndicate to consider changes in the university studies and examinations was carried by 170 votes *placet* against 79 *non-placet*. The members of the syndicate as proposed were appointed by 156 votes to 92.

It is reported that the late Mr. Seale Hayne has left residue estate amounting to more than 100,000*l.* for the purpose of establishing a college of science, art, and literature in Devonshire.

UNDER the auspices of several Greek educational societies recognised by the State, an educational congress will be held in April, 1904, in Athens. In connection with the congress it is intended to organise an exhibition of educational books and apparatus which will include an international section. Foreign contributors should deliver their exhibits in Athens not later than February 14, 1904. Detailed information can be obtained from the secretary, M. G. Drossinis, Comité d'Organisation du Congrès hellénique d'Éducation, Bureaux du Syllogue pour la Propagation de Livres utiles, 42 Rue de l'Académie, Athens.

A COMMUNICATION from the Privy Council has been received by the agents for the promotion of the proposed University of Yorkshire with reference to the application for a charter for the Yorkshire College at Leeds. The Lords of the Committee of Council state that, in view of the additional information as to their financial position and prospects which the promoters of the Yorkshire College

petition are able to furnish, they agree to recommend the grant of a charter following generally the terms of the draft submitted, on the understanding that the West Riding County Council makes a substantial subvention towards the maintenance of the university, and that the promoters undertake to raise a capital sum of at least 100,000*l.* by the earliest possible date. As to the title of the university, it is pointed out that “The Victoria University of Yorkshire” implies a possessory interest in the whole of Yorkshire, and objection might be made to it. Also, the use of the name “Victoria” might cause confusion with the “Victoria University of Manchester.”

THE report on the work of the department of technology of the City and Guilds of London Institute for the session 1902-3 shows a marked increase in the number of examinees from India and the colonies. Last year India sent up 29 candidates and the colonies 148. This year 53 Indian and 238 colonial candidates were presented for examination, 51 from New South Wales and 167 from New Zealand. Applications have been received from Cape Colony for the holding of examinations in telegraphy and telephony, manual training and other subjects, and the Agent-General has undertaken to transmit the question papers to the colonial educational authorities and to afford all necessary facilities for the conduct of the examinations. The number of candidates in cotton spinning examined in India is steadily increasing. In mechanical engineering there is also a large increase. There has been also a continuous and uninterrupted increase in the total number of classes registered by the Institute for instruction and in the number of students in attendance. While in 1902 the number of centres was 364 with 2320 classes and 36,189 students in attendance, in 1903 there were 396 centres, 2789 classes, and 38,638 students.

AT the annual dinner of the Institution of Mining and Metallurgy last week, Sir W. Anson, Parliamentary Secretary to the Board of Education, in proposing the toast of “The Institution,” referred to the scheme for a great school of technology in London, and promised the cordial and hearty cooperation of the Board of Education. Some months ago, he continued, the Board had in view the appointment of a committee to inquire into the Royal College of Science and Royal School of Mines in their special relation to this scheme. He thought he could safely say that that committee, of which Sir F. Mowatt had consented to become the chairman, would be appointed, and would commence work in January next. He was glad to be able to assure them of the cordial cooperation of the Board of Education in any scheme for the advancement of practical scientific education. He welcomed the efforts of the Institution of Mining and Metallurgy to advance technological study, because it was of immense importance to the education of the country that they should find among men of business this appreciation of the value of knowledge, of training, and of study.

By the will of the late Mr. Gordon McKay, inventor of the sewing machine that bears his name, Harvard University receives a very large bequest for applied science, estimated to be about 800,000*l.*, and eventually much more. We learn from *Science* that according to the terms of the will, Harvard University is to receive 200,000*l.* when this amount has accumulated from the income, and is thereafter to receive 80 per cent. of the balance of the income after annuities have been paid, and is to receive the entire residue of the estate after the death of the last surviving annuitant. The portion of the will defining the object of the bequest is as follows:—The net income of said endowment shall be used to promote applied science. First, by maintaining professorships, workshops, laboratories and collections for any or all of those scientific subjects which have, or may hereafter have, applications useful to man; and, second, by aiding meritorious and needy students in pursuing those subjects, especially in connection with mechanical engineering. *Science* also states that under the will of Sarah B. Harrison, Yale University is given 20,000*l.* in memory of her brother, the late Gov. Henry B. Harrison, of Connecticut, who for thirteen years was a member of the Yale Corporation. The money is given in trust, the income to be used for such purposes as the university shall desire.

A BILL to carry out the recommendations of the Universities Commission, those recommendations having been accepted by the Government of India after consultation with the local administrations, was introduced by the Hon. Mr. Raleigh on November 4 to the Supreme Legislative Council of India. We learn from the *Times* that the Bill reduces the number of ordinary fellows to 100 in the case of the senior universities, and to 75 in the cases of the Allahabad and Punjab Universities. The "syndicate" is also to be reduced in membership, so as to make it a compact working body, to be recognised as the executive authority of the university entrusted with certain powers independently of the Senate. The existing members of the Senate will be continued merely as honorary fellows, and be divested of any share in the active business of the university, excepting the right to vote for legislative or municipal representatives. The privilege of electing fellows will be maintained in cases where it exists. It will be for the Government to decide as to the extension or withdrawal of the affiliation of colleges, the function of the university in this respect being merely advisory. Sir Denzil Ibbetson announced that, with the approval of the Secretary of State, it had been decided to make for five years special grants-in-aid to universities and colleges the claims of which to special assistance in carrying out the contemplated reforms are established.

DR. FREDERIC ROSE, His Majesty's Consul at Stuttgart, has made another report to the Foreign Office on technical instruction in Germany. This report is published as No. 600 in the miscellaneous series of diplomatic and consular reports, and is concerned with the building and engineering trades' schools, the aims, organisation and equipment of the *Baugewerkschulen* being described. Dr. Rose gives very instructive accounts of the schools of this kind in Stuttgart, Karlsruhe, and Nuremberg, and concludes with a history of the development of similar technical institutions in Prussia. These building and engineering trades' schools play an important part in German technical education, being intended, not to train captains of industry, but rather subaltern officers and the rank and file of the industrial army. The schools are in some cases State schools, in others municipal schools. In Prussia nineteen out of twenty-two existing are State schools. The instruction is given both in winter and summer in some schools, in others during the winter months only. It varies to a certain extent at the various schools, both as regards duration and extent. For example, Prussian schools possess four classes of half a year each for building, whilst Nuremberg possesses five, and Stuttgart and Karlsruhe six classes for the same purpose. As illustrative of the aims of these schools, reference may be made to that at Stuttgart, where in the building departments instruction suitable for the following workers is given:—practical master builders, subordinate building officials, road and street inspectors, fire prevention inspectors, railway inspectors, and hydraulic engineering *techniker*; in the mechanical engineering department to managers of workshops and factories, overseers, machine draughtsmen, &c.; and in the surveying department to public surveyors and drainage and irrigation supervisors.

SOCIETIES AND ACADEMIES.

LONDON.

Royal Society, November 19.—"On the Rapidity of the Nervous Impulse in Tall and Short Individuals." By Dr. N. H. **Alcock**. Communicated by A. D. Waller, M.D., F.R.S.

While the effect of varying conditions on the rapidity of transmission of the nervous impulse has been fully studied, no research has yet been made as to whether the stature of the individual and the corresponding difference in the lengths of homologous nerves have or have not any influence on this rapidity, and as recent work has rendered it desirable that the question should be considered, the research here recorded was undertaken to this end.

Two series of observations were made:—(1) On the frog; (2) on man.

The results lead to the following conclusions:—

(1) The rapidity of the nervous impulse *per unit length* is the same whatever be the stature of the individual.

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(2) The time taken by this impulse to travel from the centre to the periphery is greater in taller individuals.

(3) The nodes of Ranvier exercise no influence on the rate of impulse.

Physical Society, November 27.—Dr. R. T. Glazebrook, F.R.S., president, in the chair.—Mr. Horace **Darwin** exhibited an electric thermostat. The thermostat shown at the meeting was made for Lord Berkeley, and is similar to one made for the spectrograph of the 24-inch refractor of the Royal Observatory, Cape of Good Hope. The vessel the temperature of which is to be maintained constant is surrounded by oil contained in a bath. In the oil are placed two heating-coils, through which electric currents pass. By automatically controlling these currents the temperature of the oil, and consequently of the inner vessel, is kept very nearly constant. The control is effected by means of a Wheatstone-bridge in the outer oil-bath. This bridge has two opposite arms of copper and two of manganin, so that it is only balanced at some definite temperature. Its deviations from balance affect the position of a long horizontal boom attached to the suspended coil of a galvanometer. The position of the boom determines the greater or less descent of a "hit or miss" arm which is periodically raised by a rotating-cam, and can only fall to its lowest position when the galvanometer-boom is to one side and allows it to pass; this position of the boom corresponds to a fall of temperature of the controlling-bridge. Thus the position of the "hit or miss" arm at its lowest position depends on the temperature, and it is the variation of this position which regulates the amount of current passing through the heating-coils. The thermostat supplied to the Cape Observatory is capable of keeping the temperature within $1/100^{\circ}$ C. for a period of eight hours.—On the occurrence of cavitation in lubrication, by Mr. S. **Skinner**. The experiments described in the paper arose from an observation made when determining the refractive index of a liquid by means of Newton's rings. As Newton showed, the rings can be obtained when a liquid is run into the space between the lenses. If when the liquid has been introduced the upper lens be rolled on the lower, the observer sees following the central dark spot a crescent-shaped space, very bright provided the illumination be sufficiently oblique. This is a vacuous or vapour-filled space, for when the motion of rolling ceases the liquid flows into the space and completely fills it. The inflow of the liquid depends in some way on the viscosity, and the effects are more pronounced when a more viscous liquid is used. The most convenient mode of observation is to use a deeply-coloured liquid, and to look at the space by transmitted light. The author has found that a convenient liquid is a strong solution of fuchsin in glycerin. The cavities which are formed must be produced either by splitting the liquid itself or by tearing the liquid from the glass surface. The effect may be described as a case of "cavitation." Some experiments were made to imitate the actual case of a fully lubricated axle rotating under a bearing. In ball-bearings completely immersed in oil, the experiments show that there must be a small cavity near the point of nearest approach of each ball to its neighbours, and also to the surface on which it is running. As the friction of the bearing is the viscous friction of the oil, it follows that the friction must be considerably reduced by the formation of these cavities, which are filled with relatively non-viscous vapour. The high lubricating property of oils owes its origin not only to their superior viscosity, but also, possibly, to the facility with which cavities may be formed in them.—Prof. R. **Threlfall** exhibited and described the following instruments which he has used in the testing of electric generators by air calorimetry:—(1) A "hot-wire voltmeter" accurate to $1/100$ volt. The wire in this instrument is very fine, and special precautions are taken to keep the tension on it constant, so that the elongation measured is due only to the expansion of the wire caused by the heating effect of the current. (2) A "Pitot tube" for the measurement of air velocity, the velocity being proportional to the square root of the pressure produced in the tube. (3) A "manometer" for determining pressure differences in Pitot tubes with accuracy. This consists essentially of two bottles containing coloured water, which are connected by a syphon, and the air-space of each bottle is put in communication with